

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) An isolated peptide having an amino acid sequence selected from the group consisting of:

- (a) H H A R L; (portion of SEQ ID NO: 2, residues 291-295)
- ~~(b) H A R L; (portion of SEQ ID NO: 2, residues 292-295)~~
- ~~(e)~~ (b) H A R L I; (portion of SEQ ID NO: 2, residues 292-296)
- ~~(d)~~ (c) H A R L I L; (portion of SEQ ID NO: 2, residues 46-51)
- ~~(e)~~ (d) H H A R L C L; (portion of SEQ ID NO: 2, residues 90-96)
- ~~(f)~~ (e) A R L I L; (portion of SEQ ID NO: 2, residues 47-51)
- ~~(g)~~ (f) H H A R L I F; (portion of SEQ ID NO: 2, residues 291-297)
- ~~(h)~~ (g) T H A R L I L; (portion of SEQ ID NO: 2, residues 45-51)
- ~~(i)~~ (h) A R L I; (portion of SEQ ID NO: 2, residues 47-50)
- ~~(j) A R L;~~
- ~~(k)~~ (j) H A R L C L; (portion of SEQ ID NO: 2, residues 91-96)
- ~~(l)~~ (k) A R L C L; (portion of SEQ ID NO: 2, residues 92-96)
- ~~(m) A R C L; (SEQ ID NO: 12)~~ A R L C (SEQ ID NO: 2, residues 92-95)
- ~~(n)~~ (l) M F A R L I L; (portion of SEQ ID NO: 2, residues 263-269)
- ~~(o)~~ (m) F A R L I L; (portion of SEQ ID NO: 2, residues 264-269)
- ~~(p)~~ (n) F A R L I; (portion of SEQ ID NO: 2, residues 264-268)
- ~~(q)~~ (o) F A R L; (portion of SEQ ID NO: 2, residues 264-267)
- ~~(r)~~ (p) H A R L I F; (portion of SEQ ID NO: 2, residues 292-297)
- ~~(s)~~ (q) A R L I F; (portion of SEQ ID NO: 2, residues 293-297),

and homologs thereof wherein said peptide (i) contains no more than 25 amino acids, and (ii) binds to a neural thread protein (NTP).

2. (Original) A composition comprising one or more peptides according to claim 1 and a carrier therefor.

3. (Withdrawn) A peptide having an amino acid sequence selected from the group consisting of: (SEQ ID NOS 4-11, respectively in order of appearance)

- (a) L H A R L C L A N F C G R N R V;

- (b) LARLCLANFCGNNNV;
- (c) CARYRTGHHARLM;
- (d) HHARLPLANFCG;
- (e) RTGHHARLC*LANFC;
- (f) CESARYRTGHHARLC*;
- (g) DNTHHARLIL;
- (h) SHHARLIL; and homologs thereof.

4. (Withdrawn) A composition comprising one or more peptides according to claim 3 and a carrier therefor.

5. (Withdrawn) A peptide having the amino acid sequence A R L I (portion of SEQ ID NO: 2, residues 47-50), and comprising at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide.

6. (Currently Amended) An isolated peptide, comprising the amino acid sequence H A R L (portion of SEQ ID NO: 2, residues 292-295)[[.]] and no more than between one and 25 21 additional amino acids, wherein said additional amino acids correspond to amino acid residues that flank said H A R L sequence in a neural thread protein (NTP) flanking either the 3' or 5' end of the peptide.

7. (Withdrawn) A peptide having the amino acid sequence F A R L (portion of SEQ ID NO: 2, residues 264-267), and comprising at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide.

8. (Withdrawn) A peptide having the amino acid sequence A R L, and comprising at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide.

9. (Withdrawn) A peptide having the amino acid sequence A R L C (portion of SEQ ID NO: 2, residues 92-95), and comprising at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide.

10. (Withdrawn) A polymer of a Harlil peptide sequence comprising at least two repetitions of the peptide.

11. (Withdrawn) A nucleic acid encoding an amino acid sequence selected from the group consisting of:

- (a) H H A R L; (portion of SEQ ID NO: 2, residues 291-295)
- (b) H A R L; (portion of SEQ ID NO: 2, residues 292-295)
- (c) H A R L I; (portion of SEQ ID NO: 2, residues 292-296)
- (d) H A R L I L; (portion of SEQ ID NO: 2, residues 46-51)
- (e) H H A R L C L; (portion of SEQ ID NO: 2, residues 90-96)
- (f) A R L I L; (portion of SEQ ID NO: 2, residues 47-51)
- (g) H H A R L I F; (portion of SEQ ID NO: 2, residues 291-297)
- (h) T H A R L I L; (portion of SEQ ID NO: 2, residues 45-51)
- (i) A R L I; (portion of SEQ ID NO: 2, residues 47-50)
- (j) A R L;
- (k) H A R L C L; (portion of SEQ ID NO: 2, residues 91-96)
- (l) A R L C L; (portion of SEQ ID NO: 2, residues 92-96)
- (m) A R C L; (SEQ ID NO: 12)
- (n) M F A R L I L; (portion of SEQ ID NO: 2, residues 263-269)
- (o) F A R L I L; (portion of SEQ ID NO: 2, residues 264-269)
- (p) F A R L I; (portion of SEQ ID NO: 2, residues 264-268)
- (q) F A R L; (portion of SEQ ID NO: 2, residues 264-267)
- (r) H A R L I F; (portion of SEQ ID NO: 2, residues 292-297)
- (s) A R L I F; (portion of SEQ ID NO: 2, residues 293-297) and homologs

of such amino acid sequences.

12. (Withdrawn) A composition comprising one or more nucleic acids according to claim 11 and a pharmaceutically acceptable carrier therefor.

13. (Withdrawn) A nucleic acid encoding an amino acid sequence selected from the group consisting of: (SEQ ID NOS 4-11, respectively, in order of appearance)

- (a) L H A R L C L A N F C G R N R V;
- (b) L A R L C L A N F C G N N N V;
- (c) C A R Y R T G H H A R L M;
- (d) H H A R L P L A N F C G;
- (e) R T G H H A R L C * L A N F C;
- (f) C E S A R Y R T G H H A R L C *;
- (g) D N T H H A R L I L;
- (h) S H H A R L I L; and homologs thereof.

14. (Withdrawn) A composition comprising one or more nucleic acids according to claim 13 and a carrier therefor.

15. (Withdrawn) A nucleic acid encoding the amino acid sequence A R L I, and comprising residues encoding at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide.

16. (Withdrawn) A nucleic acid encoding the amino acid sequence H A R L and comprising residues encoding at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide.

17. (Withdrawn) A nucleic acid encoding the amino acid sequence F A R L and comprising residues encoding at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide.

18. (Withdrawn) A nucleic acid encoding the amino acid sequence A R L and comprising residues encoding at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide.

19. (Withdrawn) A nucleic acid encoding the amino acid sequence A R L C, and comprising residues encoding at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide.

20. (Withdrawn) An antibody which specifically recognizes a peptide sequence having an amino acid sequence selected from the group consisting of:

- (a) H H A R L; (portion of SEQ ID NO: 2, residues 291-295)
- (b) H A R L; (portion of SEQ ID NO: 2, residues 292-295)
- (c) H A R L I; (portion of SEQ ID NO: 2, residues 292-296)
- (d) H A R L I L; (portion of SEQ ID NO: 2, residues 46-51)
- (e) H H A R L C L; (portion of SEQ ID NO: 2, residues 90-96)
- (f) A R L I L; (portion of SEQ ID NO: 2, residues 47-51)
- (g) H H A R L I F; (portion of SEQ ID NO: 2, residues 291-297)
- (h) T H A R L I L; (portion of SEQ ID NO: 2, residues 45-51)
- (i) A R L I; (portion of SEQ ID NO: 2, residues 47-50)
- (j) A R L;
- (k) H A R L C L; (portion of SEQ ID NO: 2, residues 91-96)
- (l) A R L C L; (portion of SEQ ID NO: 2, residues 92-96)
- (m) A R C L; (SEQ ID NO: 12)
- (n) M F A R L I L; (portion of SEQ ID NO: 2, residues 263-269)
- (o) F A R L I L; (portion of SEQ ID NO: 2, residues 264-269)
- (p) F A R L I; (portion of SEQ ID NO: 2, residues 264-268)
- (q) F A R L; (portion of SEQ ID NO: 2, residues 264-267)
- (r) H A R L I F; (portion of SEQ ID NO: 2, residues 292-297)
- (s) A R L I F; (portion of SEQ ID NO: 2, residues 293-297) and homologs

thereof.

21. (Withdrawn) An antibody which specifically recognizes a peptide sequence having an amino acid sequence selected from the group consisting of: (SEQ ID NOS 4-11, respectively in order of appearance)

- (a) L H A R L C L A N F C G R N R V;
- (b) L A R L C L A N F C G N N N V;
- (c) C A R Y R T G H H A R L M;
- (d) H H A R L P L A N F C G;
- (e) R T G H H A R L C * L A N F C;
- (f) C E S A R Y R T G H H A R L C *;
- (g) D N T H H A R L I L;
- (h) S H H A R L I L; and homologs thereof.

22. (Withdrawn) An antibody which specifically recognizes a peptide sequence having an amino acid sequence selected from the group consisting of:

- (a) A R L I; (portion of SEQ ID NO: 2, residues 47-50)
- (b) H A R L; (portion of SEQ ID NO: 2, residues 91-94)
- (c) F A R L; (portion of SEQ ID NO: 2, residues 264-267)
- (d) A R L; and
- (e) A R L C, (SEQ ID NO: 12)

wherein the peptide comprises at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide.

23. (Currently Amended) An isolated mimetic of a peptide having an amino acid sequence selected from the group consisting of:

- (a) H H A R L; (portion of SEQ ID NO: 2, residues 291-295)
- (b) H A R L; (portion of SEQ ID NO: 2, residues 292-295)
- (c) H A R L I; (portion of SEQ ID NO: 2, residues 292-296)
- (d) H A R L I L; (portion of SEQ ID NO: 2, residues 46-51)
- (e) H H A R L C L; (portion of SEQ ID NO: 2, residues 90-96)
- (f) A R L I L; (portion of SEQ ID NO: 2, residues 47-51)
- (g) H H A R L I F; (portion of SEQ ID NO: 2, residues 291-297)
- (h) T H A R L I L; (portion of SEQ ID NO: 2, residues 45-51)
- (i) A R L I; (portion of SEQ ID NO: 2, residues 47-50)
- (j) A R L;
- (k) H A R L C L; (portion of SEQ ID NO: 2, residues 91-96)
- (l) A R L C L; (portion of SEQ ID NO: 2, residues 92-96)
- (m) ~~A R C L; (SEQ ID NO: 12)~~ A R L C (SEQ ID NO: 2, residues 92-95)
- (n) M F A R L I L; (portion of SEQ ID NO: 2, residues 263-269)
- (o) F A R L I L; (portion of SEQ ID NO: 2, residues 264-269)
- (p) F A R L I; (portion of SEQ ID NO: 2, residues 264-268)
- (q) F A R L; (portion of SEQ ID NO: 2, residues 264-267)
- (r) H A R L I F; (portion of SEQ ID NO: 2, residues 292-297)
- (s) A R L I F; (portion of SEQ ID NO: 2, residues 293-297),

and homologs of such amino acid sequences, wherein (i) said peptide contains no more than 25 amino acids, (ii) any amino acids flanking said sequence correspond to amino acid residues that flank said sequence in a neural thread protein (NTP), and (iii) said peptide binds to an NTP.

24. (Withdrawn) A mimetic of a peptide having an amino acid sequence selected from the group consisting of: (SEQ ID NOS: 4-11, respectively, in order of appearance)

- (a) L H A R L C L A N F C G R N R V;
- (b) L A R L C L A N F C G N N N V;
- (c) C A R Y R T G H H A R L M;
- (d) H H A R L P L A N F C G;
- (e) R T G H H A R L C * L A N F C;
- (f) C E S A R Y R T G H H A R L C *;
- (g) D N T H H A R L I L;
- (h) S H H A R L I L; and homologs thereof.

25. (Currently Amended) An isolated mimetic of a peptide having an amino acid sequence selected from the group consisting of:

- (a) A R L I; (portion of SEQ ID NO: 2, residues 47-50)
- (b) H A R L; (portion of SEQ ID NO: 2, residues 91-94)
- (c) F A R L; (portion of SEQ ID NO: 2, residues 264-267)
- (d) A R L, and
- (e) A R L C; (SEQ ID NO: 12),

wherein (i) the peptide comprises at least one, but no more than and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide, (ii) said additional amino acids correspond to amino acid residues that flank said sequence in a neural thread protein (NTP), and (iii) said peptide binds to an NTP.

26. (Withdrawn) A method for purifying NTP from a biological sample comprising:

- (1) contacting a biological sample with one or more peptides having an amino acid sequence selected from the group consisting of:
 - (a) H H A R L; (portion of SEQ ID NO: 2, residues 291-295)

- (b) H A R L; (portion of SEQ ID NO: 2, residues 292-295)
- (c) H A R L I; (portion of SEQ ID NO: 2, residues 292-296)
- (d) H A R L I L; (portion of SEQ ID NO: 2, residues 46-51)
- (e) H H A R L C L; (portion of SEQ ID NO: 2, residues 90-96)
- (f) A R L I L; (portion of SEQ ID NO: 2, residues 47-51)
- (g) H H A R L I F; (portion of SEQ ID NO: 2, residues 291-297)
- (h) T H A R L I L; (portion of SEQ ID NO: 2, residues 45-51)
- (i) A R L I; (portion of SEQ ID NO: 2, residues 47-50)
- (j) A R L;
- (k) H A R L C L; (portion of SEQ ID NO: 2, residues 91-96)
- (l) A R L C L; (portion of SEQ ID NO: 2, residues 92-96)
- (m) A R C L; (SEQ ID NO: 12)
- (n) M F A R L I L; (portion of SEQ ID NO: 2, residues 263-269)
- (o) F A R L I L; (portion of SEQ ID NO: 2, residues 264-269)
- (p) F A R L I; (portion of SEQ ID NO: 2, residues 264-268)
- (q) F A R L; (portion of SEQ ID NO: 2, residues 264-267)
- (r) H A R L I F; (portion of SEQ ID NO: 2, residues 292-297)
- (s) A R L I F; (portion of SEQ ID NO: 2, residues 293-297) and homologs

of such amino acid sequences;

- (2) isolating the resulting Harlil peptide/NTP conjugates; and
- (3) separating NTP from the one or more Harlil peptides to obtain purified NTP.

27. (Withdrawn) A method for purifying NTP from a biological sample comprising:

- (1) contacting a biological sample with one or more peptides having an amino acid sequence selected from the group consisting of: (SEQ ID NOS 4-11, respectively, in order of appearance)
 - (a) L H A R L C L A N F C G R N R V;
 - (b) L A R L C L A N F C G N N N V;
 - (c) C A R Y R T G H H A R L M;
 - (d) H H A R L P L A N F C G;
 - (e) R T G H H A R L C * L A N F C;

- (f) CESARYRTGHHARLC*;
- (g) DNTHHARLIL;
- (h) SHHARLIL; and homologs thereof;
- (2) isolating the resulting Harlil peptide/NTP conjugates; and
- (3) separating NTP from the one or more Harlil peptides to obtain purified NTP.

28. (Withdrawn) A method for purifying NTP from a biological sample comprising:

- (a) contacting a biological sample with one or more peptides having an amino acid sequence selected from the group consisting of:
 - (i) ARLI; (portion of SEQ ID NO: 2, residues 47-50)
 - (ii) HARL; (portion of SEQ ID NO: 2, residues 91-94)
 - (iii) FARL; (portion of SEQ ID NO: 2, residues 264-267)
 - (iv) ARL; and
 - (v) ARLC; (SEQ ID NO: 12)wherein the peptide comprises at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide;
- (b) isolating the resulting Harlil peptide/NTP conjugates; and
- (c) separating NTP from the one or more Harlil peptides to obtain purified NTP.

29. (Withdrawn) A diagnostic test for determining the presence of Alzheimer's Disease or other neurodegenerative disorder comprising:

- (1) contacting a biological sample with one or more peptides having an amino acid sequence selected from the group consisting of:
 - (a) HHARL; (portion of SEQ ID NO: 2, residues 291-295)
 - (b) HARL; (portion of SEQ ID NO: 2, residues 292-295)
 - (c) HARLI; (portion of SEQ ID NO: 2, residues 292-296)
 - (d) HARLIL; (portion of SEQ ID NO: 2, residues 46-51)
 - (e) HHARLCL; (portion of SEQ ID NO: 2, residues 90-96)
 - (f) ARLIL; (portion of SEQ ID NO: 2, residues 47-51)
 - (g) HHARLIF; (portion of SEQ ID NO: 2, residues 291-297)
 - (h) THARLIL; (portion of SEQ ID NO: 2, residues 45-51)
 - (i) ARLI; (portion of SEQ ID NO: 2, residues 47-50)
 - (j) ARL;

- (k) H A R L C L; (portion of SEQ ID NO: 2, residues 91-96)
- (l) A R L C L; (portion of SEQ ID NO: 2, residues 92-96)
- (m) A R C L; (SEQ ID NO: 12)
- (n) M F A R L I L; (portion of SEQ ID NO: 2, residues 263-269)
- (o) F A R L I L; (portion of SEQ ID NO: 2, residues 264-269)
- (p) F A R L I; (portion of SEQ ID NO: 2, residues 264-268)
- (q) F A R L; (portion of SEQ ID NO: 2, residues 264-267)
- (r) H A R L I F; (portion of SEQ ID NO: 2, residues 292-297)
- (s) A R L I F; (portion of SEQ ID NO: 2, residues 293-297) and homologs

of such amino acid sequences;

- (2) determining the amount of NTP present in the sample; and
- (3) determining whether the amount of NTP present in the sample is above a threshold amount indicative of the presence of Alzheimer's Disease or other neurodegenerative disorder.

30. (Withdrawn) A diagnostic test for determining the presence of Alzheimer's Disease or other neurodegenerative disorder comprising:

- (1) contacting a biological sample with one or more peptides having an amino acid sequence selected from the group consisting of: (SEQ ID NOS 4-11, respectively, in order of appearance)
 - (a) L H A R L C L A N F C G R N R V;
 - (b) L A R L C L A N F C G N N N V;
 - (c) C A R Y R T G H H A R L M;
 - (d) H H A R L P L A N F C G;
 - (e) R T G H H A R L C * L A N F C;
 - (f) C E S A R Y R T G H H A R L C *;
 - (g) D N T H H A R L I L;
 - (h) S H H A R L I L; and homologs thereof;
- (2) determining the amount of NTP present in the sample; and
- (3) determining whether the amount of NTP present in the sample is above a threshold amount indicative of the presence of Alzheimer's Disease or other neurodegenerative disorder.

31. (Withdrawn) A diagnostic test for determining the presence of Alzheimer's Disease or other neurodegenerative disorder comprising:

(a) contacting a biological sample with one or more peptides having an amino acid sequence selected from the group consisting of:

- (i) A R L I; (portion of SEQ ID NO: 2, residues 47-50)
- (ii) H A R L; (portion of SEQ ID NO: 2, residues 91-94)
- (iii) F A R L; (portion of SEQ ID NO: 2, residues 264-267)
- (iv) A R L; and
- (v) A R L C; (SEQ ID NO: 12)

wherein the peptide comprises at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide;

- (b) determining the amount of NTP present in the sample; and
- (c) determining whether the amount of NTP present in the sample is above a threshold amount indicative of the presence of Alzheimer's Disease or other neurodegenerative disorder.

32. (Withdrawn) A diagnostic kit for determining the presence of Alzheimer's Disease or other neurodegenerative disorder comprising:

(1) one or more peptides having an amino acid sequence selected from the group consisting of:

- (a) H H A R L; (portion of SEQ ID NO: 2, residues 291-295)
- (b) H A R L; (portion of SEQ ID NO: 2, residues 292-295)
- (c) H A R L I; (portion of SEQ ID NO: 2, residues 292-296)
- (d) H A R L I L; (portion of SEQ ID NO: 2, residues 46-51)
- (e) H H A R L C L; (portion of SEQ ID NO: 2, residues 90-96)
- (f) A R L I L; (portion of SEQ ID NO: 2, residues 47-51)
- (g) H H A R L I F; (portion of SEQ ID NO: 2, residues 291-297)
- (h) T H A R L I L; (portion of SEQ ID NO: 2, residues 45-51)
- (i) A R L I; (portion of SEQ ID NO: 2, residues 47-50)
- (j) A R L;
- (k) H A R L C L; (portion of SEQ ID NO: 2, residues 91-96)
- (l) A R L C L; (portion of SEQ ID NO: 2, residues 92-96)
- (m) A R C L; (SEQ ID NO: 12)

- (n) M F A R L I L; (portion of SEQ ID NO: 2, residues 263-269)
- (o) F A R L I L; (portion of SEQ ID NO: 2, residues 264-269)
- (p) F A R L I; (portion of SEQ ID NO: 2, residues 264-268)
- (q) F A R L; (portion of SEQ ID NO: 2, residues 264-267)
- (r) H A R L I F; (portion of SEQ ID NO: 2, residues 292-297)
- (s) A R L I F; (portion of SEQ ID NO: 2, residues 293-297) and homologs

of such amino acid sequences; and

- (2) suitable reagents.

33. (Withdrawn) A diagnostic kit for determining the presence of Alzheimer's Disease or other neurodegenerative disorder comprising:

- (1) one or more peptides having an amino acid sequence selected from the group consisting of: (SEQ ID NOS 4-11, respectively, in order of appearance)
 - (a) L H A R L C L A N F C G R N R V;
 - (b) L A R L C L A N F C G N N N V;
 - (c) C A R Y R T G H H A R L M;
 - (d) H H A R L P L A N F C G;
 - (e) R T G H H A R L C * L A N F C;
 - (f) C E S A R Y R T G H H A R L C *;
 - (g) D N T H H A R L I L;
 - (h) S H H A R L I L; and homologs thereof; and
- (2) suitable reagents.

34. (Withdrawn) A diagnostic kit for determining the presence of Alzheimer's Disease or other neurodegenerative disorder comprising:

- (a) one or more peptides having an amino acid sequence selected from the group consisting of:
 - (i) A R L I; (portion of SEQ ID NO: 2, residues 47-50)
 - (ii) H A R L; (portion of SEQ ID NO: 2, residues 91-94)
 - (iii) F A R L; (portion of SEQ ID NO: 2, residues 264-267)
 - (iv) H A R L I; (portion of SEQ ID NO: 2, residues 292-296)
 - (v) A R L C; (SEQ ID NO: 12)

wherein the peptide comprises at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide; and

(b) suitable reagents.

35. (Withdrawn) A method of using a peptide as an analogue for NTP in a therapeutic or diagnostic assay, comprising replacing NTP with the peptide in such an assay, wherein the peptide has an amino acid sequence selected from the group consisting of:

- (a) H H A R L; (portion of SEQ ID NO: 2, residues 291-295)
- (b) H A R L; (portion of SEQ ID NO: 2, residues 292-295)
- (c) H A R L I; (portion of SEQ ID NO: 2, residues 292-296)
- (d) H A R L I L; (portion of SEQ ID NO: 2, residues 46-51)
- (e) H H A R L C L; (portion of SEQ ID NO: 2, residues 91-96)
- (f) A R L I L; (portion of SEQ ID NO: 2, residues 47-51)
- (g) H H A R L I F; (portion of SEQ ID NO: 2, residues 291-297)
- (h) T H A R L I L; (portion of SEQ ID NO: 2, residues 45-51)
- (i) A R L I; (portion of SEQ ID NO: 2, residues 47-50)
- (j) A R L;
- (k) H A R L C L; (portion of SEQ ID NO: 2, residues 91-96)
- (l) A R L C L; (portion of SEQ ID NO: 2, residues 92-96)
- (m) A R C L; (SEQ ID NO: 12)
- (n) M F A R L I L; (portion of SEQ ID NO: 2, residues 263-269)
- (o) F A R L I L; (portion of SEQ ID NO: 2, residues 264-269)
- (p) F A R L I; (portion of SEQ ID NO: 2, residues 264-268)
- (q) F A R L; (portion of SEQ ID NO: 2, residues 264-267)
- (r) H A R L I F; (portion of SEQ ID NO: 2, residues 292-297)
- (s) A R L I F; (portion of SEQ ID NO: 2, residues 293-297) and homologs

of such amino acid sequences.

36. (Withdrawn) A method of using a peptide as an analogue for NTP in a therapeutic or diagnostic assay, comprising replacing NTP with the peptide in such an assay, wherein the peptide has an amino acid sequence selected from the group consisting of: (SEQ ID NOS 4-11, respectively, in order of appearance)

- (a) L H A R L C L A N F C G R N R V;

- (b) LARLCLANFCGNNNV;
- (c) CARYRTGHHARLM;
- (d) HHARLPLANFCG;
- (e) RTGHHARLC*LANFC;
- (f) CESARYRTGHHARLC*;
- (g) DNTHHARLIL;
- (h) SHHARLIL; and homologs thereof.

37. (Withdrawn) A method of using a peptide as an analogue for NTP in a therapeutic or diagnostic assay, comprising replacing NTP with the peptide in such an assay, wherein the peptide has an amino acid sequence selected from the group consisting of:

- (a) ARLI; (portion of SEQ ID NO: 2, residues 47-50)
- (b) HARL; (portion of SEQ ID NO: 2, residues 91-94)
- (c) FARL; (portion of SEQ ID NO: 2, residues 264-267)
- (d) ARL, and
- (e) ARLC; (SEQ ID NO: 12)

wherein the peptide comprises at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide.

38. (Withdrawn) A method of using a peptide as a trap material in a diagnostic or therapeutic assay, wherein the peptide has an amino acid sequence selected from the group consisting of:

- (a) HHARL; (portion of SEQ ID NO: 2, residues 291-295)
- (b) HARL; (portion of SEQ ID NO: 2, residues 292-295)
- (c) HARLI; (portion of SEQ ID NO: 2, residues 292-296)
- (d) HARLIL; (portion of SEQ ID NO: 2, residues 46-51)
- (e) HHARLC L; (portion of SEQ ID NO: 2, residues 91-96)
- (f) ARLIL; (portion of SEQ ID NO: 2, residues 47-51)
- (g) HHARLIF; (portion of SEQ ID NO: 2, residues 291-297)
- (h) THARLIL; (portion of SEQ ID NO: 2, residues 45-51)
- (i) ARLI; (portion of SEQ ID NO: 2, residues 47-50)
- (j) ARL;
- (k) HARLC L; (portion of SEQ ID NO: 2, residues 91-96)

- (l) A R L C L; (portion of SEQ ID NO: 2, residues 92-96)
- (m) A R C L; (SEQ ID NO: 12)
- (n) M F A R L I L; (portion of SEQ ID NO: 2, residues 263-269)
- (o) F A R L I L; (portion of SEQ ID NO: 2, residues 264-269)
- (p) F A R L I; (portion of SEQ ID NO: 2, residues 264-268)
- (q) F A R L; (portion of SEQ ID NO: 2, residues 264-267)
- (r) H A R L I F; (portion of SEQ ID NO: 2, residues 292-297)
- (s) A R L I F; (portion of SEQ ID NO: 2, residues 293-297) and homologs

of such amino acid sequences.

39. (Withdrawn) A method of using a peptide as a trap material in a diagnostic or therapeutic assay, wherein the peptide has an amino acid sequence selected from the group consisting of: (SEQ ID NOS 4-11, respectively, in order of appearance)

- (a) L H A R L C L A N F C G R N R V;
- (b) L A R L C L A N F C G N N N V;
- (c) C A R Y R T G H H A R L M;
- (d) H H A R L P L A N F C G;
- (e) R T G H H A R L C * L A N F C;
- (f) C E S A R Y R T G H H A R L C *;
- (g) D N T H H A R L I L;
- (h) S H H A R L I L; and homologs thereof.

40. (Withdrawn) A method of using a peptide as a trap material in a diagnostic or therapeutic assay, wherein the peptide has an amino acid sequence selected from the group consisting of:

- (a) A R L I; (portion of SEQ ID NO: 2, residues 47-50)
- (b) H A R L; (portion of SEQ ID NO: 2, residues 91-94)
- (c) F A R L; (portion of SEQ ID NO: 2, residues 264-267)
- (d) A R L, and
- (e) A R L C; (SEQ ID NO: 12)

wherein the peptide comprises at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide.

41. (Withdrawn) A method of isolating immunoglobulins from a sample using a peptide comprising:

- (1) contacting a sample comprising immunoglobulins with at least two peptides to allow for immunoglobulin/ peptide interaction; and
- (2) isolating the resulting peptide/immunoglobulin conjugates, wherein the peptide has an amino acid sequence selected from the group consisting of:

- (a) H H A R L; (portion of SEQ ID NO: 2, residues 291-295)
- (b) H A R L; (portion of SEQ ID NO: 2, residues 292-295)
- (c) H A R L I; (portion of SEQ ID NO: 2, residues 292-296)
- (d) H A R L I L; (portion of SEQ ID NO: 2, residues 46-51)
- (e) H H A R L C L; (portion of SEQ ID NO: 2, residues 91-96)
- (f) A R L I L; (portion of SEQ ID NO: 2, residues 47-51)
- (g) H H A R L I F; (portion of SEQ ID NO: 2, residues 291-297)
- (h) T H A R L I L; (portion of SEQ ID NO: 2, residues 45-51)
- (i) A R L I; (portion of SEQ ID NO: 2, residues 47-50)
- (j) A R L;
- (k) H A R L C L; (portion of SEQ ID NO: 2, residues 91-96)
- (l) A R L C L; (portion of SEQ ID NO: 2, residues 92-96)
- (m) A R C L; (SEQ ID NO: 12)
- (n) M F A R L I L; (portion of SEQ ID NO: 2, residues 263-269)
- (o) F A R L I L; (portion of SEQ ID NO: 2, residues 264-269)
- (p) F A R L I; (portion of SEQ ID NO: 2, residues 264-268)
- (q) F A R L; (portion of SEQ ID NO: 2, residues 264-267)
- (r) H A R L I F; (portion of SEQ ID NO: 2, residues 292-297)
- (s) A R L I F; (portion of SEQ ID NO: 2, residues 293-297) and homologs

of such amino acid sequences.

42. (Withdrawn) The method of claim 41, wherein the NTP peptide/immunoglobulin conjugates are isolated by precipitation.

43. (Withdrawn) The method of claim 41, wherein the NTP peptide/immunoglobulin conjugates are isolated on an affinity column.

44. (Withdrawn) The method of to claim 41, wherein the immunoglobulins are subsequently purified.

45. (Withdrawn) A method of isolating immunoglobulins from a sample using a peptide comprising:

- (1) contacting a sample comprising immunoglobulins with at least two peptides to allow for immunoglobulin/peptide interaction; and
- (2) isolating the resulting peptide/immunoglobulin conjugates, wherein the

peptide has an amino acid sequence selected from the group consisting of:

(SEQ ID NOS. 4-11, respectively, in order of appearance)

- (a) L H A R L C L A N F C G R N R V;
- (b) L A R L C L A N F C G N N N V;
- (c) C A R Y R T G H H A R L M;
- (d) H H A R L P L A N F C G;
- (e) R T G H H A R L C * L A N F C;
- (f) C E S A R Y R T G H H A R L C *;
- (g) D N T H H A R L I L;
- (h) S H H A R L I L; and homologs thereof.

46. (Withdrawn) The method of claim 45, wherein the peptide/immunoglobulin conjugates are isolated by precipitation.

47. (Withdrawn) The method of claim 45, wherein the peptide/immunoglobulin conjugates are isolated on an affinity column.

48. (Withdrawn) The method of to claim 45, wherein the immunoglobulins are subsequently purified.

49. (Withdrawn) A method of isolating immunoglobulins from a sample using a peptide comprising:

- (a) contacting a sample comprising immunoglobulins with at least two peptides to allow for immunoglobulin/ peptide interaction; and
- (b) isolating the resulting peptide/immunoglobulin conjugates, wherein the peptide has an amino acid sequence selected from the group consisting of:
 - (a) A R L I; (portion of SEQ ID NO: 2, residues 47-50)
 - (b) H A R L; (portion of SEQ ID NO: 2, residues 91-94)
 - (c) F A R L; (portion of SEQ ID NO: 2, residues 264-267)
 - (d) A R L; and
 - (e) A R L C; (SEQ ID NO: 12)

wherein the peptide comprises at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide.

50. (Withdrawn) The method of claim 49, wherein the peptide/immunoglobulin conjugates are isolated by precipitation.

51. (Withdrawn) The method of claim 49, wherein the peptide/immunoglobulin conjugates are isolated on an affinity column.

52. (Withdrawn) The method according to claim 49, wherein the immunoglobulins are subsequently purified.

53. (Withdrawn) A method for preventing NTP interacting through the Harlil domains comprising blocking one or more Harlil domains by use of one or more Harlil peptides, Harlil peptide mimetics, antibodies to such a domain, or a combination thereof.

54. (New) An isolated peptide having an amino acid sequence selected from the group consisting of:

- (a) H H A R L; (portion of SEQ ID NO: 2, residues 291-295)
- (b) H A R L; (portion of SEQ ID NO: 2, residues 292-295)
- (c) H A R L I; (portion of SEQ ID NO: 2, residues 292-296)
- (d) H A R L I L; (portion of SEQ ID NO: 2, residues 46-51)

- (e) H H A R L C L; (portion of SEQ ID NO: 2, residues 90-96)
- (f) A R L I L; (portion of SEQ ID NO: 2, residues 47-51)
- (g) H H A R L I F; (portion of SEQ ID NO: 2, residues 291-297)
- (h) T H A R L I L; (portion of SEQ ID NO: 2, residues 45-51)
- (i) A R L I; (portion of SEQ ID NO: 2, residues 47-50)
- (j) A R L;
- (k) H A R L C L; (portion of SEQ ID NO: 2, residues 91-96)
- (l) A R L C L; (portion of SEQ ID NO: 2, residues 92-96)
- (m) A R L C (SEQ ID NO: 2, residues 92-95)
- (n) M F A R L I L; (portion of SEQ ID NO: 2, residues 263-269)
- (o) F A R L I L; (portion of SEQ ID NO: 2, residues 264-269)
- (p) F A R L I; (portion of SEQ ID NO: 2, residues 264-268)
- (q) F A R L; (portion of SEQ ID NO: 2, residues 264-267)
- (r) H A R L I F; (portion of SEQ ID NO: 2, residues 292-297)
- (s) A R L I F; (portion of SEQ ID NO: 2, residues 293-297),

and homologs thereof, wherein (i) said peptide contains no more than 25 amino acids, (ii) any peptide amino acids flanking said sequence correspond to amino acid residues that flank said sequence in a neural thread protein (NTP), and (iii) said peptide binds to an NTP.